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Introduction to Hexagonal Architecture

Hexagonal Architecture: A Flexible Approach to Software Design

DEFINITION

> Hexagonal Architecture, also known as Ports and Adapters, is a software design pattern that promotes separation of concerns. It allows applications to be more adaptable to changes in technology and user interfaces.

KEY CONCEPTS

Ports

Ports define the interfaces through which the application interacts with the outside world.

Adapters

Adapters implement the ports and handle communication between the application and external systems.

Core Logic

The core logic of the application remains independent of external factors, ensuring stability.

Testability

Hexagonal Architecture enhances testability by isolating the core logic from external dependencies.

Flexibility

It allows easy swapping of external systems without affecting the core application.

EXAMPLES

→ A web application using REST APIs as ports and various front-end frameworks as adapters.

→ An e-commerce platform integrating different payment gateways through specific adapters.

→ A messaging app that can switch between SMS and email notifications seamlessly.

MEMORY TIPS

★ Think of a hexagon with ports on each side representing different interfaces.

★ Remember 'Ports and Adapters' to visualize how components interact.

★ Use the acronym 'FLEX' for Flexibility, Logic, External, and Testability.

COMMON MISTAKES

✗ Confusing ports with adapters, thinking they serve the same purpose.

✗ Neglecting to isolate core logic from external dependencies.

✗ Overcomplicating the architecture by adding unnecessary layers.

QUICK RECAP

Hexagonal Architecture separates core application logic from external interactions through ports and adapters. This design pattern enhances flexibility and testability, making it easier to adapt to changes in technology.